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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/578,327 | 04/27/2006 | Martin Theodoor de Groot | 820614-1010 | 5725 |

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| EXAMINER |
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DYE, ROBERT C

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| ART UNIT | PAPER NUMBER |
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1791

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01/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/578,327 | DE GROOT, MARTIN THEODOOR | |
| | Examiner | Art Unit | |
| | ROBERT DYE | 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/28/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 11 recites the limitation "the application of heat" in line 2. There is insufficient antecedent basis for this limitation in the claim. Independent claim 1 which claim 11 references has a step of applying ultrasonic energy to weld the insert into a hole within the sandwich product but does not have a step of directly applying heat. It appears that the application of heat is intended to occur before the welding step but no such step exists in claim 1.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Rinse et al. (USP 5,437,750, of record).
6. Rinse et al. (hereinafter Rinse) teach a method for securing a thermoplastic insert having a body and flange (cylindrical body 12 and integrally formed axial

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thermoplastic sacrificial top and bottom rims 13 and 14, col 3 lines 62-64) in a sandwich product (thermoplastic skin and foam interior, col 1, lines 21-24 and col 6, lines 31-34) comprising the steps of drilling a hole, placing insert in said hole, applying ultrasonic energy and pressure until said sacrificial thermoplastic material of the insert is fused to the top and bottom skin sheets of the panel, and finally cooling the fused bond (col 3, lines 5-17). As shown in figure 4, the insert is placed between a horn and anvil in order to apply the ultrasonic energy.

7. Regarding claim 4, Figures 4a-4c and 5 illustrate that the dimensions of the hole are equal to the dimensions of the body of the insert unit.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rinse et al. (USP 5,437,750, of record).

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11. Regarding claim 2, Rinse teaches that the sandwich panel comprises two "fiber reinforced thermoplastic skin sheets and an intermediate core layer" (col 6, lines 32-35) and that the core material is traditionally made of foam or honeycomb material (col 1, line 23). Rinse does not explicitly state that the foam is made of thermoplastic material; however, it is well known to create foam products from thermoplastics and it would have been an obvious matter of design choice for a person having ordinary skill in the art at the time of the invention to choose thermoplastic as the construction material in order to provide a light-weight and strong structural filling material.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rinse et al. (USP 5,437,750, of record) in view of van Dreumel (USP 5,536,344, of record).

13. Regarding claim 5, Rinse teaches a method for ultrasonically welding an insert into a sandwich panel as described above for claim 1 but does not teach a method wherein the depth of the hole effects the simultaneous fusion of the insert unit bottom to the top side of the bottom cover and the underside of the flange to the top of the top covering layer. In the same field of endeavor of integrally welding inserts onto sandwich panels, van Dreumel teaches a method wherein the depth of the hole allows for simultaneous fusion of the insert to the top of both the upper and lower covering layers (col 3, lines 66-col 4 line 10; see figure 7) for the benefit of increasing the strength with which the insert is secured to the panel. Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to match the length of the insert body to the thickness of the sandwich panel so as to achieve simultaneous fusion of the insert to the top and bottom layers as taught by van Dreumel in the method

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of Rinse for the purpose of increasing the strength with which the insert is secured to the panel.

14. Claims 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinse et al. (USP 5,437,750, of record) in view of Smith et al. (USP 6,488,460).

15. Regarding claims 6 and 7-9, Rinse teaches a method for ultrasonically welding an insert into a sandwich panel as described above for claim 1 but does not teach a method wherein the cross section of the hole is divided into at least two parts in the covering layer or wherein a recess is formed in the surface of the panel before the insert is placed. In the same field of endeavor of placing inserts within sandwich panels, Smith et al. (hereinafter Smith) teach a method wherein the composite panels are deformed surrounding the immediate aperture for the purpose of ensuring a flush mount between the panel surface and the insert outer surface (col 3, lines 62-65) particularly if the insert is of the protruding flange type. Thus, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide recesses in the panel around the insert hole so as to ensure that the insert is flush with the panel exterior.

16. Regarding claim 6, wherein the cross-section of the hole is divided into two parts, providing recesses as taught by Smith would divide the hole into an outer 'recess part' and a inner part defined by a cylindrical-shaped hole for the insert body.

17. Regarding claims 8 and 9, as discussed above, the Smith teaches that the panels are deformed so as to provide a recess for the insert.

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18. Regarding claim 10, the deformed recess according to Smith includes the outer skin layer as shown in figure 4.

19. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rinse et al. (USP 5,437,750, of record) in view of Belanger et al. (USP 5,612,117).

20. Rinse teaches a method for ultrasonically welding an insert into a sandwich panel as described above for claim 1 but does not teach a step wherein the cavity surrounding the hole is filled with a thermosetting resin; however, it is well known in the art to secure inserts in a sandwich panel via the use of a potting compound. In particular, Belanger et al. (hereinafter Belanger) teaches a method wherein an insert is anchored within a sandwich panel with a thermosetting resin for the purpose of locking the insert rigidly within the wall (col 7, lines 5-8). The resin bears against the sides of the insert and embeds it within the sandwich panel. Thus, it would have been obvious to a person having ordinary skill in the art to use to a thermosetting resin as a potting compound as taught by Belanger in the method of Rinse for the benefit of furthering securing the insert into the sandwich panel. Regarding the application of heat to form the cavity, Rinse does teach that the holes are formed in a drilling step. Such drilling would generate a significant amount heat within the immediate vicinity of the drill bit and would act to form a cavity in the drilled section.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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22. Gorski (USP 4,265,688) teaches a method of securing an insert in a sandwich panel wherein ultrasonic energy is used. Core filler is also used.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT DYE whose telephone number is (571)270-7059. The examiner can normally be reached on Monday to Friday 8:00AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791